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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 11/068,263
Filing Date: February 28, 2005
Appellant(s): Brian Tran

____
Ramraj Soundararajan

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed April 28, 2008 appealing from the Office action mailed November 29, 2007.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Non-Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,889,226	O'Neil	5-2005
7,274,671	Hu	9-2007
5,151,697	Bunton	9-1992

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1-4, 9, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu (U.S. Pat. No. 7,274,671), in view of Bunton (U.S. Pat. No. 5,151,697), and further in view of O'Neil (U.S. Pat. No. 6,889,226).

Claims 1, 9, and 16:

Regarding claims 1 and 16, Hu discloses:

A computer-based (see col. 4, line 52) method comprising steps of:

a. choosing an initial base length with which to encode local identifiers tree (see abstract, line 8).

b. assigning a value of zero as a node identifier to a root node in a logical tree (see col. 3, lines 3-4).

c. sequentially assigning to descendants of a root node a local identifier having an even value and a length equal to said base length chosen in said choosing step, wherein said local identifiers are from leftmost children to rightmost children (see figure 3),

However, Hu does not disclose:

d. assigning node identifiers by concatenating local identifiers of all nodes along a path from a root node to a node to which a node identifier is currently being assigned

e. extending said initial base length if local identifier encoding combinations are exhausted before all descendants are assigned local identifiers

Bunton discloses:

d. assigning node identifiers by concatenating local identifiers of all nodes along a path from a root node to a node to which a node identifier is currently being assigned (see col. 5, lines 6-9).

It would have been obvious, at the time of the invention, having the teachings of Hu and Bunton before him/her, to combine the steps and features as disclosed by Hu with the steps and features as disclosed by Bunton to identify a string entry in the dictionary (see Bunton, see col. 5, lines 6-9).

However, the combination of Hu and Bunton does not disclose:

e. extending said initial base length if local identifier encoding combinations are exhausted before all descendants are assigned local identifiers

O'Neil discloses:

e. extending said initial base length when local identifier encoding combinations are exhausted before all descendants are assigned local identifiers (see fig. 4; wherein the combinations are extended from 2 digits to 3, i.e. (1.5 to 1.5.1).

It would have been obvious, at the time of the invention, having the teachings of Hu, Bunton, and O'Neil before him/her, to combine the step of assigning to all subsequent nodes, node identifiers generated by a concatenation of local identifiers of all nodes along a path from a root node to a node to which a node identifier is currently being assigned with the step of assigning a value of zero as a node identifier to a root

node in a logical tree and with the steps of choosing an initial base length with which to encode local identifiers tree, sequentially assigning to descendants of a root node a local identifier having an even value and a length equal to said base length chosen in said choosing step, wherein said local identifiers are assigned in increasing value from leftmost children to rightmost children, and extending said initial base length if local identifier encoding combinations are exhausted before all descendants are assigned local identifiers to identify a nodes location relative to existing nodes in the tree and to provide a mechanism for representing hierarchical data in a non-hierarchical data structure (see O'Neil, col. 1, lines 38-39).

Claim 2:

Regarding claim 2, Hu, as modified, discloses:

wherein inserting a node into an existing tree does not require change to existing node identifiers (see O'Neil, paragraph [0050], lines 16-19, and 1-11; wherein a node is inserted between nodes after a tree has been constructed (existing tree) and only assigns the inserted node an identifier (does not require change)).

Claim 3:

Regarding claim 3, Hu, as modified, also discloses:

wherein a node is inserted between a first node and a second node having consecutive local identifiers (see O'Neil, paragraph [0049]14-15).

Claim 4:

Regarding claim 4, Hu, as modified, discloses:

wherein said inserted node is assigned a local identifier having a string length longer than string length of said first node (see O'Neil, paragraph [0050], lines 27-29; wherein node 610 has a longer string length than node 608).

Claims 5 and 10:

HU, as modified, also discloses:

wherein assigning said node identifier to an inserted node comprises the following steps:

a. determining whether node to be inserted is inserted as a first child,

between two existing siblings, or as a last child under a single parent node (see col. 1, line 67 and col. 2, line 1; wherein before a node can be placed into a tree, the position has to be determined whether as a first child, between siblings, or as a last child),

b. if said node to be inserted is inserted as a first child under said single

parent node (see O'Neil col. 1, line 67 and col. 2, line 1; wherein before a node can be placed into a tree, the position has to be determined i.e. as a first child),

i. checking last byte of an existing first child (see O'Neil col. 13, lines 45-49),

ii. when the value of said last byte is not the smallest even number, then an even number greater than zero and less than the value of said last byte is selected to generate a local identifier of said node to be inserted (see O'Neil col. 15, lines 8-9), else

iii. when the value of said last byte of an existing first child is the smallest even number, generating a local identifier for said node to be inserted by replacing said last byte of said existing first child by an odd number to generate a local identifier and extending node identifier of said existing first child by a byte having a value of any arbitrary even number (see O'Neil col. 15, lines 15-24; wherein an odd / even scheme is used/ discussed but the opposite scheme can be used),

c. when said node to be inserted is inserted between two existing siblings under said single parent node, determining whether the string length of node identifier of said first sibling
is less than, equal to, or greater than the string length of node identifier of said second sibling (see O'Neil col. 6, lines 58-67; wherein the length is determined before it is assigned), else

d. when said node to be inserted is inserted as a last child after all other children under said
single parent node, assigning to said node to be inserted an even local identifier greater than that of existing last child under said single parent node (see O'Neil fig. 6 wherein the inserted node (606) has a greater identifier than its parent (602)).

However, the combination of Hu and O'Neil does not disclose:

generating a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted.

Bunton discloses:

generating a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted (see col. 5, lines 6-9).

It would have been obvious, at the time of the invention, having the teachings of Hu, O'Neil, and Bunton before him/her, to combine the steps and features as disclosed by Hu, O'Neil, and Bunton to identify a string entry in the dictionary (see Bunton, see col. 5, lines 6-9).

Claims 6 and 11:

HU, as modified, also discloses:

a. checking when local identifier of said first sibling is the last available encoding value having a string length of the local identifier of said first sibling and being smaller in value than said local identifier of said second sibling (see O'Neil figure 6 wherein before assigning an identifier to node 606, both identifiers are checked and node 606 receives an identifier value that's between the values of both siblings),

b. when said local identifier of said
first sibling is the last combination having a string length of the local
identifier of said first sibling that is smaller in value than said local
identifier of said second sibling (see O'Neil col. 6, lines 58-67; wherein the length is checked before it is assigned),

i. when the local identifier of said second
sibling is not the first available identifier having the string length of the
local identifier of said second sibling that is greater than the value of said

local identifier of said first sibling; an even-valued local identifier being less in value than said local identifier of said second sibling and having string length of local identifier of said second sibling is generated and assigned (see O'Neil col. 15, lines 15-24;), else

ii. generate a local identifier for said node to be inserted by replacing said last byte of said existing first child by an odd number and extending local identifier of said existing first child by a byte having a value of any arbitrary even number less in value than said last byte of said existing first child (see col. 15, lines 15-24), and

However, the combination of Hu and O'Neil does not disclose:

generate a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted.

generating a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted.

Bunton discloses:

generate a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted (see col. 5, lines 6-9).

It would have been obvious, at the time of the invention, having the teachings of Hu, O'Neil, and Bunton before him/her, to combine the steps and features as disclosed by Hu, O'Neil, and Bunton to identify a string entry in the dictionary (see Bunton, see col. 5, lines 6-9).

Claims 7 and 12:

HU, as modified, also discloses:

a. when the value of the local identifier of said first sibling plus two is less than the value of the local identifier of said second sibling, a local identifier for said node to be inserted takes on an even value greater than or equal to the value of said local identifier of first sibling plus two and less than the value of the local identifier of said second sibling (see O'Neil col. 9, lines 15-24 and 27-37; wherein the reference discloses a numbering scheme divisible by three but states that any scheme, that obeys the properties, can be used.)

b. when the string length of the local identifier of said first sibling plus two is equal to the string length of the local identifier of said second sibling, then the string length of the local identifier for said node to be inserted is extended wherein the length of the local identifier for the newly inserted node is the string length of said second sibling plus one, and the value of the first string length of said first sibling bytes is the node identifier of said first sibling plus one, and the new byte is an arbitrary even number less than the value of said last byte of the node identifier of said second sibling, and generating a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted (see O'Neil col. 9, lines 15-24 and 27-37; wherein the reference discloses a numbering scheme divisible by three but states that any scheme, that obeys the properties, can be used.).

However, the combination of Hu and O'Neil does not disclose:

generate a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted.

generating a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted.

Bunton discloses:

generating a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted (see col. 5, lines 6-9).

It would have been obvious, at the time of the invention, having the teachings of Hu, O'Neil, and Bunton before him/her, to combine the steps and features as disclosed by Hu, O'Neil, and Bunton to identify a string entry in the dictionary (see Bunton, see col. 5, lines 6-9).

Claims 8 and 13:

HU, as modified, also discloses:

a. when the local identifier of said second sibling is not the smallest value having the string length of said second sibling that is greater in value than the local identifier of said first

sibling, then a local identifier having a string length of said second sibling and having even value smaller than the value of the last byte of the node identifier of said second sibling is generated and assigned else (see O'Neil col. 9, lines 15-24 and 27-37; wherein the reference discloses a numbering scheme divisible by three but states that

any scheme, that obeys the properties, can be used; also, see O'Neil fig. 6 wherein the inserted node (606) has a smaller value than that of the second sibling),

b. when the local identifier of said first sibling is not the largest value with the string length of the local identifier of said first sibling, one of the larger values for the new encoding is generated and assigned (see O'Neil fig. 6 wherein a larger value for the inserted node is generated and assigned), else

c. extending the local identifier of said first sibling by a length, by setting the last byte to the highest odd number and the new byte to an even number less than the value of the last byte, and generating a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted (see O'Neil fig.6 wherein the identifier of the inserted node (606) is extended by a length).

However, the combination of Hu and O'Neil does not disclose:

generate a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted.

generate a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted.

Bunton discloses:

generate a node identifier by a concatenation of local identifiers of all nodes along a path from a root node to said node to be inserted (see col. 5, lines 6-9).

It would have been obvious, at the time of the invention, having the teachings of Hu, O'Neil, and Bunton before him/her, to combine the steps and features as disclosed

by Hu, O'Neil, and Bunton to identify a string entry in the dictionary (see Bunton, see col. 5, lines 6-9).

Claim 14:

HU, as modified, also discloses:

wherein said assigned local identifiers are assigned values based on variable-length (see O'Neil, col. 2, lines 9 and 10; wherein the scheme allows for shorter lengths which means that the length may be longer or shorter, i.e. variable) binary string encoding (see O'Neil, col. 9, lines 27-29; wherein the scheme can be any numbering scheme).

Claim 15:

HU, as modified, also discloses:

An article of manufacture comprising a computer usable medium having computer readable program code (see O'Neil col. 3, lines 18-19) embodied therein which implements prefix encoding node identifiers, as per claim 9, wherein said assigned local identifiers are assigned values based on variable-length (see O'Neil, col. 2, lines 9 and 10; wherein the scheme allows for shorter lengths which means that the length may be longer or shorter, i.e. variable) binary string encoding (see O'Neil, col. 9, lines 27-29; wherein the scheme can be any numbering scheme).

(10) Response to Arguments

Applicant's arguments, filed 4-14-2008, have been fully considered but they are not persuasive.

Applicant's arguments that neither Hu, O'Neil, nor Bunton disclose, "assigning a value of zero as a node identifier to a root node in a logical tree", is acknowledged but is not deemed persuasive.

The examiner respectfully disagrees with the applicant in that Hu clearly discloses the root node have a value of zero in col. 3, lines 3-4. Additionally, the root of a tree is always at level zero.

Applicant's arguments that neither Hu, O'Neil, nor Bunton disclose, " sequentially assigning to descendants of a root node a local identifier having an even value and a length equal to said base length chosen in said choosing step, wherein said local identifiers are assigned in increasing value from leftmost children to rightmost children" is acknowledged but is not deemed persuasive.

What is actually claimed is "sequentially assigning to descendants of a root node a local identifier having an even value and a length equal to said base length chosen in said choosing step, wherein said local identifiers are from leftmost children to rightmost children". This is quite different from what is argued. Based on the interpretation of the applicant's claim language, Hu, in figure 3, discloses just that. In figure 3, each node has a local identifier assigned to it. Each identifier ends in zero which makes it an even value and from leftmost to rightmost child, each

node has a local identifier. If applicant wishes to have the claims teach what he is arguing, he should amend them to do just that.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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July 7, 2008

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